Oct. 13, 1925.

1,556,660

J. A. WILLIAMSON

COIN COUNTING MACHINE

Filed Nov. 4, 1924

2 Sheets-Sheet 1

Fig. 1.

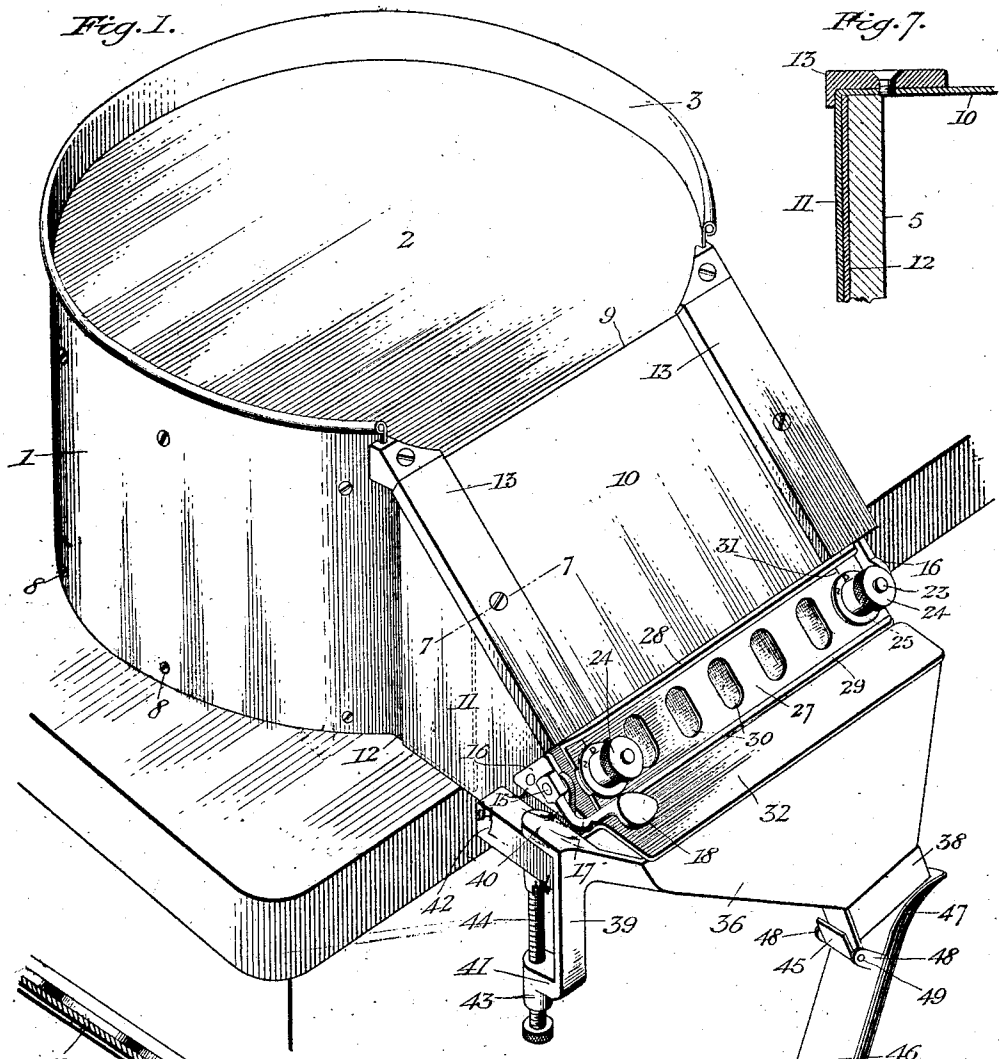


Fig. 7.

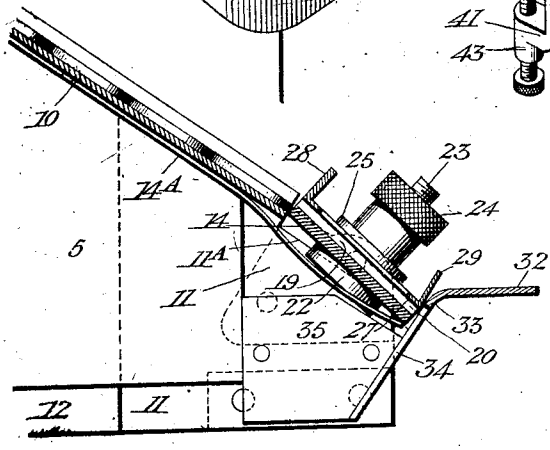
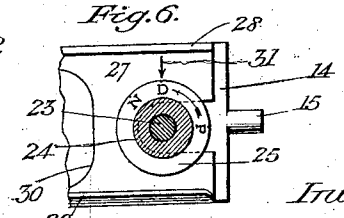


Fig. 5.

Fig. 6.



Inventor:

By John A. Williamson.

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2 Sheets-Sheet 2

Fig. 2.

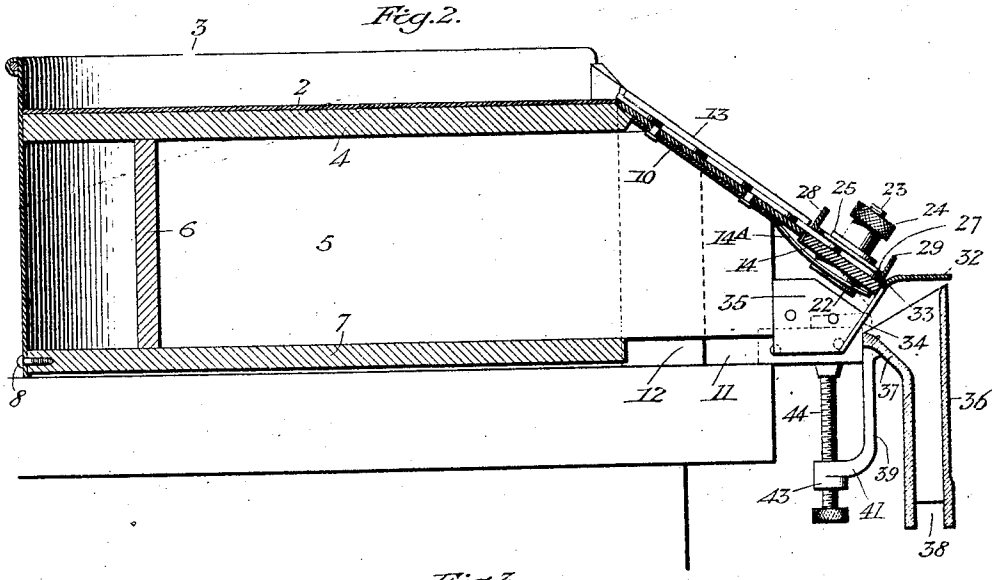


Fig. 3.

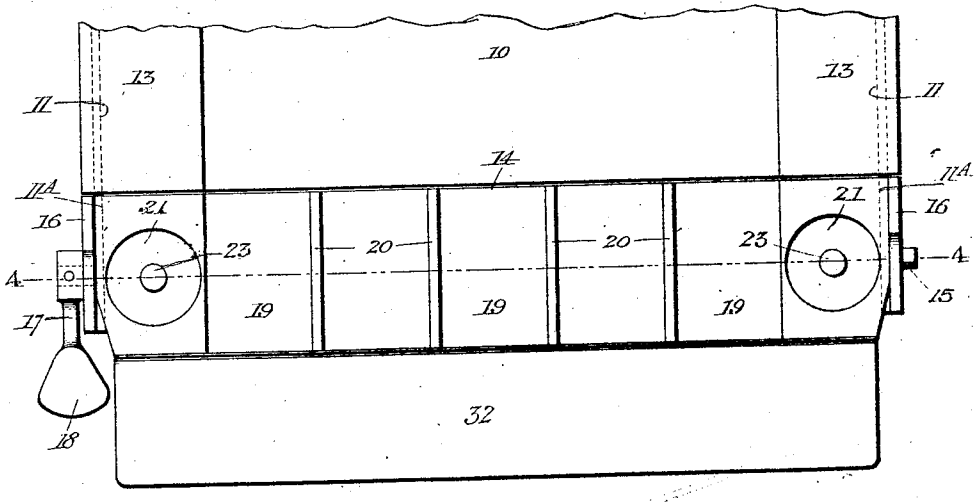
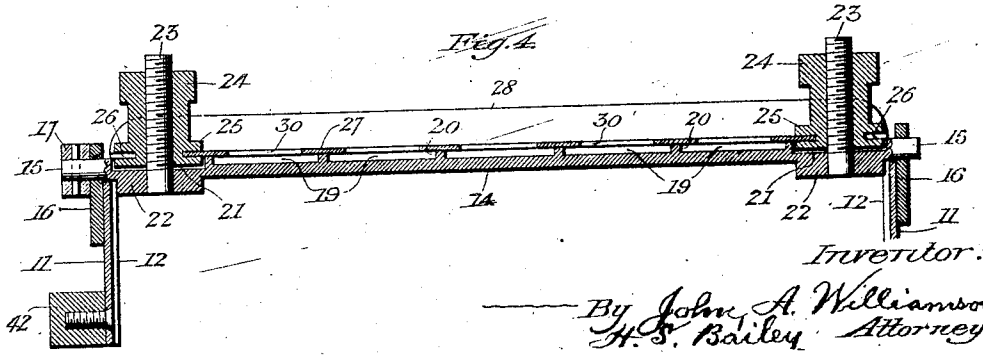


Fig. 4.



Inventor:

By John A. Williamson
H. S. Bailey Attorney.

Patented Oct. 13, 1925. 1,556,660

UNITED STATES PATENT OFFICE.

JOHN A. WILLIAMSON, OF DENVER, COLORADO, ASSIGNOR TO THE AUTOMATIC COIN STACKER CORPORATION, OF DENVER, COLORADO, A CORPORATION OF COLORADO.

COIN-COUNTING MACHINE.

Application filed November 4, 1924. Serial No. 747,832.

To all whom it may concern:

Be it known that I, JOHN A. WILLIAMSON, a citizen of the United States of America, residing at the city and county of Denver and State of Colorado, have invented a new and useful Coin-Counting Machine, of which the following is a specification.

My invention relates to a coin counting machine.

And the objects of my invention are:

First: To provide a coin counting and stacking machine that is especially adapted to count ten pennies, or ten nickels, or ten dimes, at a time, and that is also adapted to stack fifty pennies at a time in the stacking cylinder, or forty nickels, equal two dollars worth of nickels at a time, in the stacking cylinder, or fifty dimes at a time, equal five dollars worth of dimes, in the stacking cylinder, and that requires only five counting operations of ten coins, of each one of these three denominations of coins at a time by itself, to fill the stacking cylinder.

Second: To provide a coin counting machine that is provided with a single unchangeable plate that is easily and quickly raised or lowered to provide the exact space between it and the coin chute to receive either the pennies, or the nickels, or the dimes, whichever are being counted, and to discharge them into the stacking cylinder, and the stacking cylinder is made long enough and large enough in diameter internally to receive fifty pennies, or forty nickels, or fifty dimes.

Third: To provide a very simple penny, or nickel, or dime, counting and stacking machine that weighs only about ten pounds and consequently can be quickly moved from one table or desk to another in an office by an operator thereof, and that is inexpensive to manufacture and can be sold for a few dollars apiece, and that will actually and quickly count and stack these three coins in very much less time than they can be counted and stacked by hand.

I attain these objects by the mechanism illustrated in the accompanying drawings in which:

Fig. 1, is a perspective view of the improved machine;

Fig. 2, is a vertical sectional view of the same;

Fig. 3, is a plan view—full size—showing more particularly the coin counting bar and its tilting lever, the adjustable covering plate being removed;

Fig. 4, is a vertical longitudinal sectional view on the line 4—4 of Fig. 3, including the adjustable covering plate.

Fig. 5, is a vertical section through a portion of the machine, showing the counting bar in its tilted or coin-discharging position.

Fig. 6, is plan view of one end portion of the adjustable coin covering plate and the adjacent adjusting nut therefor, provided with initial letters indicating the adjustment of the plate for a given denomination of coin; and

Fig. 7, is a sectional view on the line 7—7 of Fig. 1.

Referring to the accompanying drawings:

The numeral 1, indicates the coin receiver which comprises a substantially cylindrical body or wall in which is supported a flat horizontally disposed plate 2, the wall extending a short distance above the plate to form a rim 3, the rim and plate constituting a tray for the reception of the coins to be counted and stacked. The plate 2 rests upon a frame consisting of a horizontal, circular wooden support 4, which rests upon side pieces 5 and an end piece 6, which, in turn, are supported upon a base board 7, which is secured to the wall by screws 8.

About one-fourth of the rim 3 is cut away to the level of the plate 2, and between the two points, where the rim is cut away, the plate 2 terminates in a straight edge 9, from which point a downwardly inclined slideway 10 extends at an angle of approximately forty-five degrees.

This slideway is in the form of a metal plate, which is bent at right angles, at opposite points, to form side plates 11, which are secured to forwardly extending projecting portions 12 of the cylindrical wall 1. Upon the side edge portions of the slideway 10 are secured parallel guard strips 13, which prevent the coins which are swept from the tray onto the slideway, from sliding off the sides of the said slideway. The slideway is approximately three inches in length, and at its lower end is located the improved coin counter, which comprises a flat transverse bar 14, having short trunnions 15 on its opposite ends, which are

journaled in bearing blocks 16, which are rigidly secured in any suitable manner to the side plates 11. One of the trunnions 15 extends beyond its bearing block 16 and has rigidly mounted thereon one end of a lever 17, the other end of which is provided with a knob or button 18, by means of which the lever can be depressed by the finger of an attendant to tilt the bar 14 on its axis for a purpose to be hereinafter set forth. The bar 14 is grooved transversely to form five parallel coin receiving channels 19, which are separated by narrow partition strips 20, and the outer sides of the two outer channels are in direct line with the inner edges of the guards 13, as shown in Figure 3. The end portions of the bar 14 are formed with circular recesses 21, which are of a depth equal to about half the thickness of the said bar, and the corresponding under portions of the bar are formed with circular projections 22, in which are rigidly secured the lower ends of upwardly extending threaded studs 23, which are in the axial centers of the circular recesses 21. Upon the studs 23 are screwed thumb nuts 24, having flanges 25 on their lower ends, which are adapted to fit loosely in the circular recesses 21, and these flanges are formed with deep annular grooves 26. A plate 27 covers the coin channels 19 of the bar 14, and the ends of this plate are bifurcated and are slipped into the annular grooves 26 of the flanges 25, so that the walls of the grooves 26 engage the bifurcations of the said ends of the plate 27, and the plate is therefore moved either up or down by the turning movement of the nuts 24, as clearly shown in Figure 4.

The side edges of the plate 27 are formed with longitudinal flanges 28 and 29, which serve to stiffen the plate and thus prevent warping or bucking of the same; and the flange 28 also serves as a stop to prevent coins which overlap other coins, from sliding off the lower end of the slideway 10. The plate 27 is provided with sight openings 30, corresponding to the coin channels 19, and these openings enable the operator of the machine to see that each channel 19 has two coins therein before the bar 14 is tilted to discharge the coins from the said coin channels.

The height of the partition strips 20, which separate the coin channels 19, is slightly greater than the thickness of a dime, and when the plate 27 rests on the said partitions, the coin counter is adapted for counting dimes, and neither pennies nor nickels can pass into the counter. When pennies are to be counted, the plate 27 must be raised slightly to increase the depth of the coin channels 19, and when nickels are to be counted the plate 27 must be raised still higher to allow for the greater thickness of the nickels.

In order to properly adjust the thumb nuts 24 and consequently the plate 27, the flanges 25 of the said nuts have displayed thereon the letters D, P, and N, indicating respectively dimes, pennies and nickels. When the plate is screwed down against the partition strips 20, the letter D on each nut will register with a vertical indicator mark 31 on the plate 27, and the counter is arranged to receive dimes. When the nuts are given a quarter turn to the left, the letter P on each nut will register with the marks 31, and the counter is arranged to handle pennies. Then by giving the nuts a little more than a half turn, in the same direction, the letter N on each nut registers with the marks 31 and the counter is arranged to handle nickels.

When the counting bar 14 is in its normal position, the faces of the channels 19 are flush with the face of the slideway 10, and the coins will therefore slide into the channels 19, which are of a length to accommodate two rows of coins, the top row extending beyond the tops of the channels, as shown in Figure 2. The bar 14 is held in its normal position by a blade spring 14^A, the rear portion of which is secured to the under side of the slideway 10, but its forward end portion is slightly bowed downward and its extreme end bears against the under side of the said bar 14 adjoining its forward edge and exerts an upward pressure against the bar. In its normal position the ends of the bar 14 rest upon the edge portion 11^A of the side plates 11, which act as stops, to limit the upward movement of the bar and hold it flush with, and at the same inclination as the slideway 10.

The coins first entering the channels 19 are prevented from sliding out of the channels by a guard in the form of a horizontal plate 32, the inner edge of which is curved downward as shown at 33, and lies against the lower ends of the channels so as normally to close them. The plate 32 is provided at its ends with downwardly extending portions 34, having integral end plates 35 which are riveted or otherwise rigidly secured to the forward ends of the side plates 11, thus securing the plate 32 to the machine, and in the position shown most clearly in Figures 2 and 5.

The plate 32 also serves to cover the top of a hopper 36, into which the coins discharge from the channels 19. This hopper is the same as that shown in my pending application No. 706,747, filed April 15, 1924, for a combined automatically and manually operating coin counting and stacking machine, and has one end which is at an inclination of about 30 degrees to a horizontal

line, and an opposite end which is at an inclination of about 30 degrees to a vertical line. The front side of the hopper is vertically disposed and extends up beyond the upper edge of the rear side, as shown in Figure 2, and the upper portion of the rear side stands at a rearward inclination, as shown at 37, thus enlarging the mouth of the hopper. The lower end of the hopper terminates in an outlet spout 38. A bracket 39 is formed on each end of the hopper, the upper and lower ends 40 and 41 of which are bent at right angles. The upper ends 40 of these brackets rest upon metal blocks 42, which are rigidly secured to the side plates 11, and the lower ends 41 are formed with apertured portions 43, which are threaded to receive thumb screws 44, which are screwed against the under sides of the blocks 42, and thus securely clamp the hopper to the blocks 42.

By reference to Figure 2 it will be seen that the mouth of the hopper is in position to receive the coins which discharge from the counter, and the plate 32 covers the mouth of the hopper and prevents coins from accidentally falling into the hopper. A hook 45 is secured to one end of the hopper spout and is adapted to support a coin stacking tube 46, which is of a size to receive the coins which discharge from the five channels 19.

The stacking tube 46 is of the form shown in Figure 1, one half of the width of the upper end portion being cut away to leave a chute portion 47 which is flared at its end to rest against the spout of the hopper. Ears 48 are formed on the base of the chute in which a pin 49 is mounted, which rests in the hook 45, and thus supports the stacker below the spout of the hopper, and so that the stacker hangs at an inclination to a vertical line.

In practice, the machine is set upon a desk or table, near enough to the edge of the same to permit the stacker to hang down in the position shown in Figure 1. The tray is then filled with coins of one denomination, as dimes or nickels or pennies, and the coins are swept by hand over the edge 9 of the tray and on to the inclined slideway 10, down which they slide and enter the counter channels. When two rows of coins have entered the said channels, or in other words, when each channel has received two coins, the counter bar is tilted to the position shown in Figure 5 by a downward pressure on the lever 17, and in this position the rear edge of the bar stands above the level of the slideway 10 and thus blocks the passage of the coins on the slideway, while the front edge of the bar passes below the edge 33 of the plate 32, which held the coins in the channels, and the coins are thus permitted to discharge into the hopper 36 and thence into the stacker. When the lever 17 is released, the spring 14A turns the bar 14 to its normal position, and the channels 19 are again filled with coins. At each tilting movement of the bar 14, ten pennies or ten nickels or ten dimes, as the case may be, are discharged into the hopper, and the stacking tube is of a length to receive fifty pennies, or forty nickels or fifty dimes, and the coins may be quickly transferred from the stacking tube to the usual paper wrapping tube.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the character described, a coin holder, a pivotally mounted member having a plurality of channels adapted to receive a fixed number of coins, a downwardly inclined slideway adapted to connect said holder and said pivotally mounted member, and means for tilting said member to discharge the coins therefrom, said member when tilted acting to cut off the supply of coins from the slideway.

2. In a device of the character described, a coin holder, a downwardly inclined slideway leading therefrom, a transverse pivotally mounted spring-controlled bar adjoining the lower end of the slideway, having a plurality of channels adapted to receive a fixed number of coins from said slideway, means for tilting said bar to discharge the coins from the channels, means for preventing the discharge of coins from the channels until the bar is tilted, the rear edge of said bar, when tilted, acting to check the flow of coins down the said slideway.

3. In a device of the character described, a pivoted coin receiver open at both ends, means for normally closing one of said ends, means for supplying coins to said receiver, and means for tilting said receiver to discharge coins therefrom, the rear edge of said receiver acting to cut off the supply of coins to the receiver when the said receiver is tilted.

4. In a device of the character described, a coin holder, a downwardly inclined slideway leading therefrom, a pivotally mounted bar adjoining the lower end of the slideway having open-ended channels therein, adapted to hold a fixed number of coins, a stationary stop for normally closing the outlet ends of said channels, and means for tilting said bar whereby the outlet ends of the channels are free to discharge the coins, the edge of said bar adjoining the slideway acting to cut off the supply of coins to the receiver when the bar is tilted.

5. In a device of the character described, the combination with a coin holder and an inclined slideway leading therefrom, of a transverse bar adjoining the lower end of said slideway and flush with the same, said

bar being pivotally mounted at its ends, and having a plurality of open-ended channels for receiving a fixed number of coins from said slideway, a spring for maintaining said bar in its normal position, a fixed plate, one edge of which normally closes the outlet ends of said channels, means for tilting said bar to discharge the coins from said channels, the rear edge of said bar acting to check the flow of coins down said slideway when said bar is tilted, a hopper to receive the coins discharging from the channels, said fixed plate acting to cover said hopper, and coin receiving means on said hopper.

6. In a device of the character described, the combination with a coin holder, a slideway leading therefrom and a member having a plurality of open-ended channels for receiving a predetermined number of coins from said slideway, of a cover plate for said channels, means for adjusting said plate with respect to said channels, to adapt said channels to receive coins of different denominations, a fixed stop for normally closing the outlet ends of said channels, a lever to tilt said channeled member to discharge the coins therefrom, said member when tilted acting to check the flow of coins down said slideway, and means for restoring said member to its normal position.

In testimony whereof I affix my signature.

JOHN A. WILLIAMSON.